

## BIBLIOGRAPHICAL NOTICES.

*Plantæ Javanicæ Rariores, descriptæ Iconibusque illustratæ, quas in Insula Java, annis 1802-18, legit et investigavit THOMAS HORSFIELD, M.D. ; e siccis Descriptiones et Characteres plurimarum elaboravit JOANNES J. BENNETT ; Observationes Structuram et Affinitates præsertim respicientes passim adjecit ROBERTUS BROWN. Fol. Lond. Part 4, 1852.*

WE are glad to announce the publication of the fourth and concluding part of this valuable work, the earlier parts of which are noticed in the second and fourteenth volumes of our 'Annals.'

The acknowledgements there made to Dr. Horsfield for his eminent services in science, and to the Hon. Court of Directors for their liberal patronage of them, render it unnecessary for us to say more than that the '*Plantæ Javanicæ Rariores*' will ever be considered a record *ære perennius* of the merits of the one (associated as he here is with his friends Mr. Brown and Mr. Bennett, to whom the present work owes its existence), and, among other splendid publications equally due to the liberality of the East India Company, of the munificent character of the other.

To this concluding part Dr. Horsfield has added a very valuable map of Java, on which the routes in his different journeys are traced, a geographical preface illustrating the map, and a very interesting postscript, in which he gives a rapid sketch of his excursions, with observations, especially on the volcanos of the island.

Dr. Horsfield's labours in Java began and ended under the protection of the Dutch Government, to the officers of which he gratefully acknowledges his obligations. His first visit to Java was in 1800, as a surgeon on board a vessel from Philadelphia, and it was during this voyage that he was so struck with the beauty of the island, that he felt an irresistible desire to study its productions. In the next year he therefore returned to Java, and entered the Dutch service, receiving the appointment of surgeon in the Colonial Army. His first Report to the Batavian Society of Arts and Sciences led to a more liberal appointment, which enabled him to extend his researches. From 1800 to 1811 Java was in the possession of Holland, and it was restored in 1816. It was in the five intervening years that Dr. Horsfield enjoyed the patronage of Sir Stamford Raffles, and formed that friendship which ever after constituted the pride and charm of his life. It was through the influence of this eminent man that his labours were made known to Sir Joseph Banks: and a collection of plants sent to him in 1814 was the occasion of the first communication from Mr. Brown, who eventually, on Dr. Horsfield's arrival in England in 1819, examined and arranged the herbarium, containing 2196 species. The present work is the joint production of that great botanist, and of his friend and associate Mr. Bennett, and must be considered the most important contribution to our botanical knowledge that has been made in this country of late years.

We copy Dr. Horsfield's closing passage of his postscript:—

“I have the pleasing duty,” he says, “to acknowledge the ability and assiduity with which Mr. Bennett has performed the task he has undertaken. The minuteness of detail and extent of research with which he has elaborated the articles he has contributed, elucidate clearly and satisfactorily the characters and habits of the subjects as well as the history of their discovery, and the labours bestowed on their investigation by preceding botanists. Mr. Brown has, agreeably to his original intention, contributed his remarks on the affinity and structure of the subjects described; he has also afforded many valuable suggestions in the progress of the work, and the whole has received his examination and revisal. I embrace with pleasure the opportunity now afforded me of publicly expressing my great obligations to Mr. Brown. The examination and arrangement of my herbarium, the laborious duties connected with the superintendence of the figures contained in this work, the preparation of the illustrative details, and the time devoted to the description of the subjects, are by no means the only marks of friendship which I have received from that distinguished botanist, who, ever since my arrival in England, has afforded to me his advice and assistance in my researches connected with natural history, and on many other important occasions.”

Of the plants contained in the concluding part, five in number, nearly all are remarkable for such singularities of structure as to render the determination of their affinities a task of considerable difficulty; and the elaboration of the whole part is due to Mr. Brown. The plant least removed from ordinary forms is *Actinophora fragrans*, a genus indicated in Dr. Wallich's list and there referred to *Buttneriaceæ*; with respect to which Mr. Brown observes, that “it certainly does not belong to *Buttneriaceæ* as I originally defined it, but this may equally be said of several genera included in that order, and which, like *Actinophora*, are more obviously referable to *Tiliaceæ*; at the same time, as I observed in proposing the separation of *Buttneriaceæ*, these two families gradually pass into each other.” The more remarkable characters of *Actinophora* are its “enlarged subfoliaceous spreading calyx, accompanying a crustaceous evalvular monospermous pericarpium.”

The two succeeding articles are dedicated to a new species of *Sarcostigma* (*S. Horsfieldii*, R. Br.), and *Iodes ovalis* of Blume; two genera referred by Mr. Brown to the natural family of *Phytocreneæ* of Arnott. He discusses the question of the value of their floral envelopes, and comes to the conclusion that they are properly to be regarded as calyx and corolla. He notices also the views of different authors as to their affinity, and gives a synopsis of the characters of the family *Phytocreneæ* and of the genera belonging to it, viz. *Phytocrene*, Wall., *Sarcostigma*, Wight and Arn., *Iodes*, Blume, *Nansiatum*, Buch. Ham., and *Miquelia*, Meisn. (including *Jenkinsia*, Griff.). As a genus “*Phytocreneis* affine,” he enumerates also *Pyrenacantha*, Hook., properly united by M. Planchon with *Adelanthus* of Endlicher. While removing *Sarcostigma* from *Hernandiaceæ* in which Messrs. Wight and Arnott had placed it, Mr. Brown inci-

dentially observes that the two genera, *Hernandia* and *Inocarpus*, of which that family has been composed, do not appear to be very nearly related to each other.

The fourth species figured in this part is *Cardiopteris lobata*, Wall. List, which is identified with *Cardiopteris Javanica* of Blume. After tracing some curious points in the botanical history of the genus, Mr. Brown proceeds to notice the more remarkable peculiarities of its structure, and discusses the questions of its hermaphroditism, the position of the micropyle of its seed, and the singular arrangement of its perfect and imperfect stigmata. In illustration of the latter point we quote his description of the pistillum. "The external structure of the pistillum is very singular. In an early stage of the flower, immediately before or even at the time of expansion, there are apparently two stigmata: of these the more obvious is capitate, undivided, fleshy, but not papillose, and is supported on a distinct style; the second is quite sessile, much shorter in this stage than the capitate branch, and having its upper or inner surface distinctly stigmatic or papillose. In the next stage, the latter, which I regard as the efficient stigma, gradually enlarges, becoming longer than the capitate organ, which in my opinion is an imperfect stigma, and as in this stage the ovarium though enlarged has not perceptibly increased in diameter, this capitate stigma has the appearance of being lateral. The perfect stigma, which continues to lengthen, its upper surface becoming more evidently hispid or papillose, not unfrequently remains crowning the samara even when ripe, but frequently also it is then deciduous, while the imperfect capitate stigma, which has undergone no change either in size or surface, more generally remains after the real stigma has fallen." With respect to the affinities of this curious genus, Mr. Brown does not regard any of the approximations hitherto made as satisfactory; and although aware of several important objections to the view, is "inclined to consider *Cardiopteris* as an isolated genus or family to be placed at no great distance from *Phytocreneæ*, chiefly through *Iodes*."

The concluding article contains a monograph of the genus *Bennettia*, established by Mr. Brown in Dr. Wallich's List in 1847, and recently published by M. Tulasne under the name of *Cremostachys*. Mr. Brown regards *Bennettia* as bearing "the same relation to *Antidesma* (for *Antidesmeæ* contains at present no other well-established genus) that the polypetalous bear to the apetalous genera of *Euphorbiaceæ*." In the present case he states that "the presence of petals may even be regarded as of more than ordinary importance, their usual form in the male flower being necessarily connected with the æstivation of stamina." This remarkable peculiarity is thus described in the species figured, *Bennettia Javanica*, R. Br.:—"Stamina decem distincta. Filamenta brevissima, latiuscula, sepalis et petalis opposita. Antheræ biloculares, loculis connectivo lato distinctis longitudinaliter dehiscentibus; omnes cucullis petalorum semi-inclusæ, ita ut duæ petalo singulo oppositæ esse videantur (exterior interiorque), sed dum exterior ad filamentum petalo oppositum pertinet, interior e loculis respondentibus filamentorum duorum petalis alternantium formata est." Mr. Brown adds, that "the affinity between *Euphor-*

*biaceæ* and *Antidesmeæ* is rendered more obvious by the addition to the latter of *Bennettia*; but the structure of ovarium and the monospermous drupaceous pericarpium readily distinguish them. *Iodes* and *Sarcostigma* also agree with *Bennettia* in several important points, particularly in their unisexual minute flowers, ovarium with two pendulous ovula, monospermous drupa, and in most respects in the structure of seed; they differ in habit, being twining or scandent shrubs without stipules, in their monopetalous persistent inner perianthium or corolla, in æstivation and reduced number of stamina, in structure of antheræ, and in the embryo being inverted, not transverse." The number of species of *Bennettia* described is seven, "chiefly distinguishable by minute, but," as Mr. Brown believes, "constant differences in their male flowers and in the form of their fruits." With the exception of the Javanese species, they are all from Tavoy, Singapore, and Pulo-Penang, where the genus was first discovered by Jack, who referred it, with doubt however, to *Limonia*. In treating of this genus Mr. Brown incidentally refers to the principle which he laid down in 1810, when proposing and characterizing the family of *Combretaceæ*, which he placed among *Polypetalæ* "non solum propter petalorum in pluribus existentiam, sed quia vera natura partium affinitatesque ordinum, ex contemplatione generum in quibus structura magis evoluta, quam ex iis in quibus aliqua pars suppressa, tutius erui queant;" a principle in conformity with which he in 1814 also "placed among *Polypetalæ Euphorbiaceæ*, a family to which the same reasoning is still more strikingly applicable."

*Preparing for Publication.*

An Elementary Introduction to the Study of Palæontology; with numerous Figures Illustrative of Structural Details. By F. M'Coy, Professor of Geology and Mineralogy, Queen's College, Belfast.

Also, by the same Author,

A Manual of the Genera of British Fossils; comprising Systematic Descriptions of all the Classes, Orders, Families, and Genera of Fossil Animals, found in the Strata of the British Isles; to be completed in four or five Parts, forming one volume, 8vo, of about 500 pages, with nearly 1000 Wood Engravings.

PROCEEDINGS OF LEARNED SOCIETIES.

LINNÆAN SOCIETY.

Feb. 18th, 1851.—W. Yarrell, Esq., Vice-President, in the Chair.

Read "A Catalogue of Recent Land and Freshwater *Mollusca* found in the neighbourhood of Nottingham." By Edward Joseph Lowe, Esq., F.R.A.S. &c.

WATER SHELLS (*Univalves*).

*Neritina fluviatilis*. Abundant in the river Trent near Beeston and near Nottingham, and in the river Soar near Thrumpton.